Automatic Battery Charger
Switching mode with Micro-controlled
Input: 220-260Vac / Output: 24Volt DC

User's Manual and Important Safety Information

Model: OC-1204A (12 Volt – 4 Amp) – Suits Golf Carts

FEATURES

The OzCharge OC-1204A Battery Chargers comprise of the latest microprocessor controlled technology and they include the following features:

- High frequency Switching Mode
- Full time pulse charge output
- Microprocessor controlled with safety timers at every stage.
- Heavy-duty cables with **Anderson PP30 Type Connector**
- Designed for Australian & New Zealand Conditions.

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- This charger is designed for indoor use only and should never be exposed to rain.
- Do not attempt to use the charger if it has been dropped or damaged.
- Never attempt to charge a damaged battery, frozen battery or non-rechargeable battery.
- Do not use the charger in a closed area or poorly-ventilated area.
- Never smoke, use an open flame, or create sparks near a battery or charger during charging operation as this may cause an explosion / explosive gas.
- Do not operate the charger if the cord or plug is damaged.
- Do not disassemble the charger. Take it to a qualified person if a repair is required.
- Must not be used or played with by infirm persons or children.
- Switch off the mains power supply before connecting or disconnecting the unit to a Battery.

OPERATING INSTRUCTIONS

The OzCharge Battery Charger is easy to operate and requires no technical experience.

1. Connecting the Battery charger to your Battery

(a) Simply plug the charger lead into the fly lead from your device, ensuring the connector is lined up correctly and not stressed.*(Note: The plugs only fit one way and excess force is not advised)*

2. Connect the battery charger to the Mains power (240Vac),

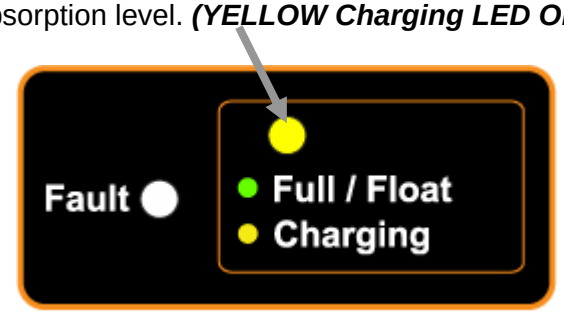
(b) The Charger will automatically start when AC power is connected.
(Note: If the Fault Indicator LED illuminates Red, please check your connections. Refer to Trouble Shooting Page for further information)

The Charging process

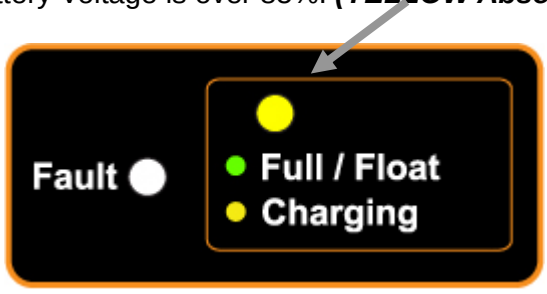
The Charging LED's will indicate the Charging Stages.
The charging stages are as follows:

STAGE (#1) - Soft start: Charges the battery using half the maximum current until the battery voltage is over 11V. ***(YELLOW Charging LED Flashing)***

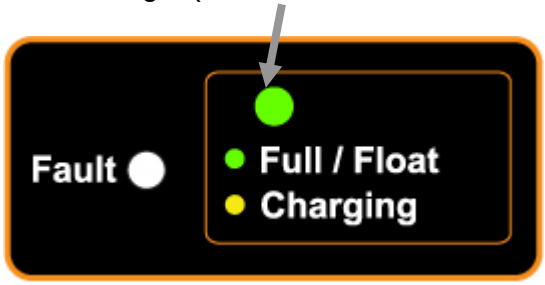
STAGE (#2) - Bulk Charge: Charges using a constant maximum current until the battery rises to the Absorption level. ***(YELLOW Charging LED ON***)



STAGE (#3) - Absorption: This stage charges the battery using a constant voltage providing that the Battery Voltage is over 85%. ***(YELLOW Absorption LED ON)***



STAGE (#4) - Full / Float: Battery is fully charged and is ready for use. It will be maintained at a safe constant voltage. (***GREEN Full / Float LED ON***)



3. Disconnecting the Battery charger from Battery.

(a) Switch OFF and Remove the AC Power Socket from the outlet.
(b) Disconnect the charger lead from the battery.

OPERATION – L.E.D INDICATORS

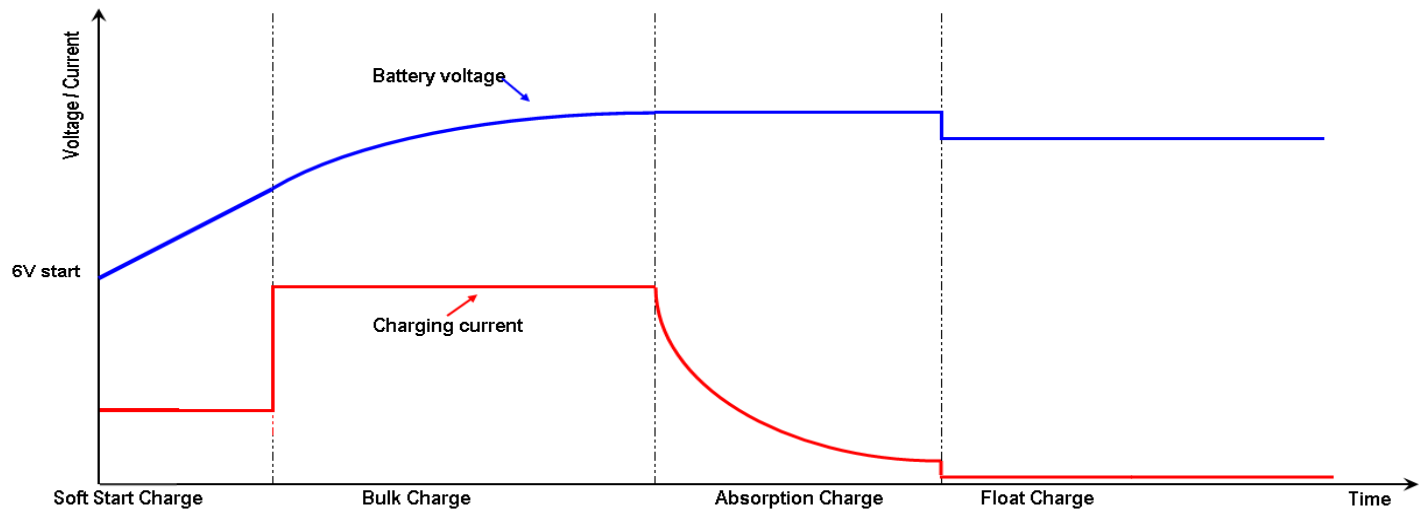
The charger contains Two (2) L.E.D indicators.
One (1) is used for the charging status and the other LED is a Fault Indicator.

L.E.D INDICATIONS	Fault	Charging	Full / Float
	Red	Yellow	Green
AC Power Connected, battery disconnected.	FLASH	OFF	OFF
Soft Start Charging (Battery <10%)	OFF	FLASH	OFF
Bulk Charging (Battery <50%)	OFF	ON	OFF
Absorption Charging (Battery 50 - 90%)	OFF	ON	OFF
Float Charging (4 Hours) (Battery >90%)	OFF	OFF	FLASH
Fully Charged (Battery = 100%)	OFF	OFF	ON
Output Pins shorted / Reverse Polarity Connection	FLASH	OFF	OFF
Soft Start / Bulk Charging (Timed Out)	ON	OFF	OFF

TROUBLE SHOOTING

Problems	Indication	Possible causes	Suggested solution
Charger does not work	Indicator lights are not on	- No AC power	- Check AC connections and make sure Power Point and Charger is switched ON
Charger has no DC output	Fault LED is Flashing.	- Output is short circuited - Output cables are not connected to the battery. - Output Reverse polarity connection	- Check that there are no foreign objects inside the connectors. - Check that the plugs have been securely connected. - Check that the plugs have not been forced together incorrectly.
No Charging Current	Fault LED is ON	- Battery is severely sulphated - Battery has a damaged cell - Overheat protection mode	- Check the Battery condition, age etc. - Battery may need replacement. - Move battery & Charger to cooler environment
Long charging time, Full light does not come on	Fault LED is ON	- Battery capacity too large - Battery is defective - 4 hours Soft Start timed out - 16 hours Bulk Charge timed out	- Check the charger specification matches the battery capacity. - Battery cannot be charged and must be replaced.

CHARGING CURVE (VOLTAGE)



SPECIFICATIONS

1	AC Power Input Characteristics	Normal	Withstand	Unit
1-1	Input voltage :	220-240	200~260	Vac
1-2	Input frequency :	50/60	47-63	Hz
1-3	Unload input current :	80	max.	mAac
1-4	Input current consumption at 240Vac input, output 13.5V 4A loading	.55	±10%	Aac
1-5	Nominal efficiency: at 240Vac input, output 13.5V 4A	>80%		
2	**Charging Output Control Characteristics**			
2-1	**Soft Start → Bulk Charge → Absorption Charge → Float Charge (Full)**			
2-2-1	Soft Start – start conditions:	3	±0.5	Vdc
2-2-2	Soft Start output current controlled:	2	±0.5	Adc
2-2-3	Soft Start mode transits to Bulk mode when battery voltage is above:	11.0	±0.5	Vdc
2-2-4	Soft Start charging time limited: Stop charging if battery voltage cannot reach 12.0V	4	±0.5	Hours
2-3-1	Bulk charging current controlled:	4	±0.2	Adc
2-3-2	Bulk charging time(Tcc) limited:	16	±0.5	Hours
2-4-1	Absorption Mode charging output voltage controlled:	14.5	±1%	Vdc
2-4-2	Absorption mode transits to Float mode conditions:			
	1) Maintains charge until current drops by less than 0.1A over a 1 hour period.			
	2) Maintains charge for 2 hours until the charging current drops by less than 0.5A.			
2-4-3	Absorption maximum charging time(Tcv) limited: (Force to Float mode when Time-out)	8	±0.5	Hours
2-5-1	Float charging output voltage controlled:	13.7	±1%	Vdc
2-5-2	Maximum Float charging current controlled:	2.0	±0.2	Adc
2-5-3	Float charging time limited:	4	±0.2	Hours
2-5-3	Restarts to Bulk charging when the battery voltage is below:	12.8	±0.5	Vdc
2-6	Unload output voltage when battery is disconnected	0.5	Max.	Vdc
2-7	Output short-circuit current when battery is disconnected :	1	Max.	mAdc
2-8	Battery flow back current (to the charger) when connected to 12V battery, AC Power disconnected :	1	Max.	mAdc
3	**Safety & Protection**			
3-1	Built in Temperature Protection.			
3-1	Output Short Circuit Protection, Reverse Polarity Protection			
4	**Electrical Parts**			
4-1	Input Connector	6 feet VDE H03VVH2-F 2X0.75mm^2 with 2PIN SAA plug.		
4-2	Out Put Connector	4 feet - Anderson PP30 Type Connector		
5	**Physical Parameters**			
5-1	Plastic Enclosure Dimensions	164(L) x 85(W) x 55(H) mm		
5-5	Net weight :	approx. 620g		
6	**Environmental Characteristics**			
6-1	Operating temperature :	0 to 40 ^{o}C		
6-2	Storage temperature :	-25 to 85 ^{o}C		
6-3	Operating Humidity range :	0 to 90% RH		
6-4	Cooling:	Passive / Natural		

2 YEAR MANUFACTURER WARRANTY

Zylux Distribution Pty. Ltd. (OzCharge) warrants to the Customer that this product is substantially free from defects in materials and workmanship under normal use for a period of 2 Years from the Date of Purchase.
Please ensure you keep a copy of your receipt on file as this will be required for proof of purchase and to validate your warranty.

Obtaining Warranty Service

Within the warranty period, the Customer must contact the authorised supplier / retailer where the product was purchased or alternatively you can contact the OzCharge service centre through one of the following methods:

Hotline: (03) 9482 2203
Website: www.ozcharge.com.au

If the Authorised Supplier and / or OzCharge service centre concludes that while under normal use, a product failure or malfunction occurred during the warranty period and was caused by a defect in material or workmanship (see Exclusions), the Customer will be asked to ship to the nearest service point. The product must be packaged appropriately for safe shipment. To prove that the product is under warranty, the customer should enclose a copy of their receipt for proof of purchase. It is recommended that returned products be sent by registered mail as Zylux Distribution Pty Ptd. (OzCharge) accepts no responsibility / liability for goods lost or damaged in transit. Return Shipping costs to be incurred by the Customer.

Exclusions

If upon receiving a product for repair and if testing and examining the product has disclosed that the alleged defect or malfunction in the product does not exist or was caused by the Customer or any third persons misuse, physical abuse, water damage, unauthorised attempts to open, repair or modify the product or improper installation, this will not be covered under this warranty.

This Warranty is void if:

1. The product has been tampered or repaired by unauthorised personnel.
2. The warranty seal is broken or altered.
3. The warranty period has expired.